

### Abstract

It is possible to simultaneously identify the sound coming direction from a sound source in all directions and estimate the sound intensity of the sound source. A plurality of microphones (11) are arranged on the surface of a baffle (10) of a shape such as a sphere and polyhedron so that sound from all directions are acquired. A calculation device (40) calculates the amplitude characteristic and the phase characteristic of acoustic signals acquired by the microphones (11). The signal information and information on sound field analysis around the baffle are integrated and calculation to emphasize a sound coming from a particular direction is performed for all the directions so as to identify the sound coming direction from a sound source. According to these calculation results and the distance input by an input device (70), it is possible to estimate the sound intensity of the sound source at a plurality of portions generated at the sound source or boundary surface.